Amendment to the Claims

Please substitute the following pending claims 1, 10, 16, 17, 20-24, 31, 32 and 45-60 as replacement claims for the previously-pending claims. In this Amendment A, claims 1, 10, 16, 17, 20-24, 31 and 32 have been amended, claims 2-9, 11-15, 18, 19, 25-30 and 33-44 have been canceled, and new claims 45-60 have been added.

1. (currently amended) A pharmaceutical composition comprising core-shell particles, ~~wherein~~ said core-shell particles comprising ~~comprise~~ a core component and a shell component, the core component comprising a potassium-binding cation exchange polymer, the shell component comprising a polymer having a permeability for potassium ion that is higher than the permeability for a competing cation, said core-shell particles having a capacity for binding potassium ion in a gastrointestinal tract of an animal subject suffering from renal insufficiency or renal failure, ~~a greater amount of a target solute in the presence of said shell component compared to the amount of target solute bound in the absence of said shell component~~ and retaining a significant amount of said bound potassium ion ~~target solute~~ during a period of ~~therapeutic and/or prophylactic use~~ residence of the core-shell particles in the gastrointestinal tract of the animal subject suffering from renal insufficiency or renal failure.

2-9. (canceled)

10. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6~~ wherein said shell component polymer is capable of modulating ~~a~~ movement of said ~~target solute and/or of a~~ competing cation ~~solute~~ into ~~and/~~or out of said core-shell particle.

11-15. (canceled)

16. (currently amended) The pharmaceutical composition of claim 1 ~~claim 12~~ wherein said permeability of said shell component polymer to potassium ion ~~to said target solute~~ is independent of said permeability of said shell component polymer to said competing cation ~~solute~~.

17. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6~~ wherein said core component is physically or chemically attached to said shell component.

18-19. (canceled)

20. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6~~ wherein said shell component polymer exhibits a greater interaction with said competing cation ~~solute~~ compared to said potassium ion ~~target solute~~.

21. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6~~ wherein said shell component polymer repels said competing cation ~~solute~~ by ionic interaction.

22. (currently amended) The invention ~~pharmaceutical composition~~ of claim 1 or 45 ~~, 5, or 6~~ wherein said shell component is about 1nm to about 50 μm thick.

23. (currently amended) The invention ~~pharmaceutical composition~~ of claim 1 or 45 ~~, 5, or 6~~ wherein said core-shell particle is about 200 nm to about 2 mm in size.

24. (currently amended) The invention ~~pharmaceutical composition~~ of claim 1 or 45 ~~23~~ wherein said shell component ~~core-shell particle~~ is about 0.005 microns to about 20 microns thick ~~500 μm in size~~.

25-30. (canceled)

31. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6~~ wherein said shell component is deposited with a coating process.

32. (currently amended) The pharmaceutical composition of claim 1~~, 5, or 6 wherein said~~ further comprising ~~shell component comprises~~ an enteric coating.

33-44. (canceled)

45. (new) A method of removing potassium ion from a gastrointestinal tract of an animal subject suffering from renal insufficiency or renal failure, the method comprising:

administering to the animal subject suffering from renal insufficiency or renal failure a composition comprising core-shell particles, the core-shell particles comprising a core component and a shell component, the core component comprising a potassium-binding cation exchange polymer, the shell component comprising a polymer having a permeability for potassium ion that is higher than a permeability for a competing cation,

binding potassium ion with the core-shell particles in the gastrointestinal tract of the animal subject, and

retaining a significant amount of the bound potassium ion with the core-shell particles for a period of residence of the core-shell particles in the gastro-intestinal tract of the animal subject suffering from renal insufficiency or renal failure.

46. (new) The invention of claim 1 or 45 wherein the core component comprises a crosslinked cation-exchange polymer.

47. (new) The invention of claim 1 or 45 wherein the core component comprises a cation-exchange polymer comprising acidic functional groups.

48. (new) The invention of claim 1 or 45 wherein the core component comprises a cation-exchange polymer comprising functional groups selected from the group consisting of carboxylate, phosphonate, sulfate, sulfonate, sulfamate and combinations thereof.

49. (new) The invention of claim 1 or 45 wherein the shell component comprises a crosslinked polymer.

50. (new) The invention of claim 1 or 45 wherein the shell component comprises a crosslinked synthetic polymer.

51. (new) The invention of claim 1 or 45 wherein the shell component comprises an ethylenic polymer.

52. (new) The invention of claim 1 or 45 wherein the shell component comprises a vinylic polymer.

53. (new) The invention of claim 1 or 45 wherein the shell component comprises a crosslinked vinylic polymer.

54. (new) The invention of claim 1 or 45 wherein the shell component is essentially not disintegrated during the period of residence of the core-shell particles in the gastro-intestinal tract.

55. (new) The invention of claim 1 or 45 wherein the core-shell particles retain at least about 50% of the bound potassium ion with the core-shell particles for the period of residence of the core-shell particles in the gastro-intestinal tract.

56. (new) The invention of claim 1 or 45 wherein the core-shell particles retain at least about 75% of the bound potassium ion with the core-shell particles for the period of residence of the core-shell particles in the gastro-intestinal tract.

57. (new) The invention of claim 1 or 45 wherein the core-shell particles selectively bind potassium ion over the competing cation during the period of residence of the core-shell particles in the gastro-intestinal tract.

58. (new) The invention of claim 1 or 45 wherein the animal subject is a human suffering from end stage renal disease (ESRD).

59. (new) The invention of claim 1 or 45 wherein the animal subject is a human dialysis patient.

60. (new) The invention of claim 1 or 45 wherein the animal subject is a human suffering from hyperkalemia.

[NO FURTHER ENTRIES THIS PAGE]